

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

PCT

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2005 FB 101 E	FOR FURTHER ACTION	
See Form PCT/IPEA/416		
International application No. PCT/EP2005/001058	International filing date (day/month/year) 03.02.2005	Priority date (day/month/year) 27.02.2004
International Patent Classification (IPC) or national classification and IPC INV. B29C67/24 B28B11/24 H05B6/64 B29C67/00		
Applicant TONCELLI, Luca		

<ol style="list-style-type: none"> This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. This REPORT consists of a total of 6 sheets, including this cover sheet. This report is also accompanied by ANNEXES, comprising: <ol style="list-style-type: none"> <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of 8 sheets, as follows: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)), containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
<ol style="list-style-type: none"> This report contains indications relating to the following items: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application

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International application No.
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Box No. I Basis of the report

1. With regard to the **language**, this report is based on

- the international application in the language in which it was filed
- a translation of the international application into , which is the language of a translation furnished for the purposes of:
 - international search (under Rules 12.3(a) and 23.1(b))
 - publication of the international application (under Rule 12.4(a))
 - international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

Description, Pages

1-6 received on 12.12.2005 with letter of 09.12.2005

Claims, Numbers

1-6 received on 12.12.2005 with letter of 09.12.2005

Drawings, Sheets

1/1 as originally filed

a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. The amendments have resulted in the cancellation of:

- the description, pages
- the claims, Nos.
- the drawings, sheets/figs
- the sequence listing (*specify*):
- any table(s) related to sequence listing (*specify*):

4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- the description, pages
- the claims, Nos.
- the drawings, sheets/figs
- the sequence listing (*specify*):
- any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N) Yes: Claims 1-6

No: Claims

Inventive step (IS) Yes: Claims 1-6

No: Claims

Industrial applicability (IA) Yes: Claims 1-6

No: Claims

2. Citations and explanations (Rule 70.7):**see separate sheet**

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

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Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

D1: EP-A-0 786 325 (TONCELLI, MARCELLO) 30 July 1997 (1997-07-30)
D2: US-A-3 953 703 (HURWITT ET AL) 27 April 1976 (1976-04-27)
D3: ETMANSKI B ET AL: "HOCHGEFUELLTE DUROPLASTE (TEIL 1).
\\HAERTUNG VON EPOXIDHARZBETON MIT MIKROWELLEN"
PLASTVERARBEITER, ZECHNER UND HUETHIG VERLAG GMBH.
SPEYER/RHEIN, DE, vol. 43, no. 7, 1 July 1992 (1992-07-01), pages 64-66,
XP000293307 ISSN: 0032-1338

- 2.1 The document D1 discloses (the references in parentheses applying to this document) a method for manufacturing sheets of agglomerate material comprising, in succession the following steps:

- preparation of a mix by mixing inert materials of predetermined particle size with an organic binder,
- distribution of said mix inside a tray mould so as to form a layer of mix,
- vacuum vibro-compaction in order to obtain a compacted sheet, and
- catalytic hardening of the organic binder by means of heating ovens in order to obtain the final sheet (claim 1).

The subject-matter of claim 1 therefore differs from D1 in that at the end of said vibro-compaction step, an additional step which consists in subjecting the compacted sheet to a dielectric preheating by means of electromagnetic waves of a frequency less than 300 MHz in order to attain a temperature lower than the temperature at which the catalysis of the binder starts.

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

The objective problem underlying claim 1 appears to be how to reduce the time required for the hardening step (cf. description page 1, line 24 - page 2, line 33).

Although dielectric preheating of a cast layer of ceramic slip to enhance the evaporation of the solvent from the slip, preferably done at a frequency of 2850 MHz is known from document D2 (column 2, lines 23-52, claims 1-3) and

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document D3 generally teaches the replacement of oven heating by microwave heating at 2450 MHZ for a mix of stone materials with a binder consisting of organic resins, the man skilled in the art is neither hinted by D2 nor by D3 to come to the solution as proposed by claim 1.

The subject-matter of claim 1 is therefore considered as involving an inventive step (Article 33(3) PCT).

- 2.2 The document D1 discloses also (the references in parentheses applying to this document) a plant for manufacturing sheets of agglomerate material using the method according to any one of the preceding claims and comprising, in succession,
- a first station for preparing a mix by mixing a granulate of predetermined particle size with a binder consisting of organic resins,
 - a second station for distributing said mix inside a tray mould so as to form a layer of mix,
 - a third vacuum vibro-compaction station for obtaining a compacted sheet,
 - and a final hardening station comprising at least one heating oven for catalysis of the organic binder so as to obtain the final sheet (column 1, lines 18-33, figure 1)

The subject-matter of claim 6 therefore differs from D1 in that an intermediate station is arranged between said third vibro-compaction station and said final hardening station and comprises means for generating of electromagnetic waves having a frequency less than 300 MHZ for preheating said compacted sheet up to a temperature lower than the temperature at which the catalysis of the binder starts.

The subject-matter of claim 6 is therefore new (Article 33(2) PCT).

The objective problem underlying claim 6 appears to be how to reduce the time required for the hardening step (cf. description page 1, line 24 - page 2, line 33).

For the same reasons set out in the above paragraph can the subject-matter of claim 6 be considered as involving an inventive step (Article 33(3) PCT).

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3. Claims **2-5,7** respectively are dependent on claims **1 and 6** respectively and as such also meet the requirements of the PCT with respect to novelty and inventive step.
4. The subject-matter of claims **1-6** is considered as susceptible of industrial application (Article 33(4) PCT).

Re Item VIII

Certain observations on the international application

1. The feature "granulates" is missing from claim 4, see description page 4, lines 9,10.